Definitive radiotherapy for unresected adenoid cystic carcinoma of the trachea

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Adenoid cystic carcinoma (ACC) is a rare malignancy that usually originates in the salivary glands of the head and neck but has rarely been known to originate in the trachea. This tumor has a tendency for local and distant recurrences. The present report describe a 66 years old female with unresectable ACC of the trachea who was treated with definitive radiotherapy (RT). She presented humid cough and dyspnoea. A chest CAT scan and bronchoscopy were performed, showing a exophytic mass in the in the middle third tracheal, occupying 85% of the tracheal lumen, with a diameter of 4 cm. Histological confirmation was obtained by biopsy. Endoprosthesis was required. The patient was treated with definitive three-dimensional conformal radiotherapy (3DCRT), using photons and a dose of 60 Gy. Esofagitis G1 was appeared as acute toxicity and clinical and radiological response were observed at 11 months after treatment. The surgical resection is the mainstay of treatment of tracheal adenoid cystic carcinoma, tumor size, location, and patient comorbidities may preclude surgery, and the optimal nonsurgical management remains undefined. In the absence of locoregional lymph node metastases, the highly conformal radiotherapy is considered as alternative treatment. The results of radiotherapy with photons for advanced ACC have been reported to be suboptimal in the setting of inoperable, not completely resected and recurrent tumors. Nevertheless postoperative radiotherapy have been show to have a favorable impact on local control rates and survival rates in advance stages of ACC: In our case we obtained a favourable clinical and radiological response with acceptable toxicity performing definitive RT in unresectable tracheal adenoid cystic carcinoma.

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Hyperfractionated RT-QT treatment in small cell lung carcinoma

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Introduction. The standard treatment in small cell lung cancer limited disease (SCLC LD) involves chemotherapy (CT) based in platinum + thoracic radiotherapy + prophylactic cranial irradiation (IPC). In patients <70 years with good ECOG, chemo-radiotherapy treatment hyperfractionated (RTHF) concomitant early is considered the better treatment option for both local control and long-term survival.
Objective. To analyze toxicity, response and survival in our series.
Material and methods. Patients diagnosed to SCLC LD between August'09 and June'12, treated with CT based in platinum + RTHF concomitant according Turrisi scheme. Inclusion criteria were: <70 years, PS 0–1, good respiratory function, absence of significant comorbidity and socio-family support.
Results. We analyzed 12 patients (7 men and 5 women) with a median age of 62.5 years (range 43–73). Six patients received concomitant QT-RTHF early on (with the first 2 cycles), the other 6 was late. 45 Gy were given 1.5 Gy for session, two sessions per day separated by 6–8 h. No prophylactic nodal irradiation was performed. Patients received 4–6 cycles of chemotherapy and then, except one patient who refused treatment, received IPC (36 Gy at 2 Gy per session). Both pulmonary and esophageal toxicity was acceptable. Mean follow-up was 19.45 months (range 7–33 months). In 2 patients were lost follow-up, four have died of the disease and 6 remain alive free of disease with a mean of 15.5 months (range 7–22).
Conclusions. QT-RTHF has shown better results in treating SCLC LD, although the long-term survival remains low (5–10%). 70% of patients free of disease after 2 years do not fall, according to the literature. We will have to see the evolution of our patients.

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Implementation of hypoxia imaging with ^{18}F-FMISO-PET into treatment planning and delivery in lung cancer

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Introduction. Hypoxia is one of the main causes of the failure to achieve local control using radiotherapy. This is due to the increased radioresistance of hypoxic cells. ^{18}F-fluoromisonidazole (^{18}F-FMISO)-PET is a non-invasive imaging technique that can assist in the identification of intratumor regions of hypoxia. We initiated a phase I trial to examine the feasibility of ^{18}F-FMISO PET/CT guided IMRT with the goal of maximally escalating the dose to radioresistant hypoxic zones concurrent with chemotherapy in stage III lung cancer patients.
Objective. This work investigates the feasibility of dose painting to these hypoxic regions in the patients included in the first step of dose escalation study.
Materials and methods. Four patients were included. The CT simulation, fluorodeoxyglucose (^{18}F-FDG) PET/CT, and^{18}F-FMISO PET/CT scans were co-registered using the same immobilization methods. A first planning target volume (PTV-FDG) was defined by clinical examination and available imaging studies, including ^{18}F-FDG PET/CT. Regions of elevated ^{18}F-FMISO uptake within